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AN INDUSTRIOUS PHILADELPHIA COLLECTOR.

James Ridings was born at Bolton-le-Moors, Lancashire, England, April 30, 1803, died in Philadelphia, July 29, 1880, aged 77 years. His early years present the usual uneventful history of an English boy. In 1830 he came to this city and soon became acquainted with Drs. Rush and McClellan, who knowing his tastes urged him to pursue his studies and gave him every encouragement. He continued collecting in this locality, and, by his example, stimulated others, and thus assisted in forming the nucleus of the Entomological Society of Philadelphia, which was founded in 1859, the name of which was subsequently changed to the American Entomological Society.

He did not confine himself to this vicinity in collecting, but made numerous journeys, more or less distant, to Colorado and Kansas in 1864, Georgia in 1865, and many times to the Shenandoah Valley, of Virginia, which was always a favorite locality with him.

Mr. Ridings was always glad to be of assistance to others, and many among us remember his kindly advice and gifts of specimens. Distrustful of his own ability, and naturally retiring, he

never entered the field as a writer, but allowed the numerous new species discovered by him to be made known by others.

Although not a young man at time of the organization of the American Entomological Society, he lived to see it firmly established and occupying a prominent position among kindred societies. He was for a time vice-president of the Society, and for several years curator of its cabinet.

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COLLECTING ON THE "CREST OF THE CONTINENT."

By DAVID BRUCE, Rockport, N. Y.

I extract the following notes from my journal, thinking they may interest some readers of the NEWS who have never breathed "the difficult air of the iced mountains' top:"

June 24.—Left Breckenridge (Colorado) at 4 A.M. and had a pleasant walk to the top of the range, the weather had been cold and stormy the day before, but it cleared in the night and the sun rose bright and beautiful, the clouds and mist caps soon disappearing from the peaks. As I went along I picked off a number of fine examples of *Argynnis eurynome* and *Melitæa anicia* from the undersides of the flowers of *Actinella grandiflora*, where they had passed the night. As I was anxious to reach a silver mining camp in Summit County, where I intended to stay a few days, I did not stop to collect much on my way, but sat down a few minutes and watched the antics of a pair of white-tailed ptarmigan that were disturbed by my presence. I was evidently in close proximity to their young brood. The male flew to a rock a few rods distant, and loudly chuckled and cackled as if to encourage his spouse, who went through the usual performance of birds of her kind when the young are threatened with danger, she fluttered across my feet as if almost disabled, sometimes rolling over and gasping as if dying. I had seen these manœuvers several times before and knew what it all meant; the chicks were doubtless close by, lying motionless among the broken rocks. I have on several occasions come suddenly upon a brood, and it is quite surprising how soon and successfully they will conceal themselves even on the bare ground, the mother simulating the cries and actions of a wounded bird to divert the attention of the intruder from her progeny.

I reached the cluster of cabins that constituted the camp. The mine itself was at some distance and difficult of access, everything being taken to and fro on the backs of the "burros" or jacks, as they are more generally called here; a long string of them was just then descending the mountain side by the "Winter trail" the quantity of snow even at this late date rendering the shorter but more precipitous route of the "Summer trail" still unavailable. It was nearly noon, a respectable family kept the boarding house, which was clean and roomy—and the dinner, nearly ready, gave forth its unmistakable fragrance, finding a ready response in my hungry stomach. I came with a good "recommend" from the brother of the proprietors. I had boarded with him at another station lower down, and he had suggested to me this place as the best I could find if I wished to collect at highest elevations—and so I found it. I was warmly welcomed, and told to make myself thoroughly at home. When the men, fifteen in number, came to dinner "Brother Jim's" letter was read before them all, and my status as a collector of "specimens" was explained and quickly understood, and everything was pleasantly arranged in a few minutes; one good fellow, who had quite an interesting collection of minerals, claimed me as "chum;" he had a large cabin of his own and a spare "bunk," so I had a good time at this place for seven days on this occasion, and have made several pleasant visits since. The camp itself was about 13,000 feet above sea-level, the peaks close in the western front ranging from more than 1000 feet higher. Bright sunny mornings and cool cloudy afternoons were the general rule. I usually worked the peaks and upper plateaus until noon, then after dinner I went below into the valleys as far as timber line, which here was at nearly 12,000 feet, always returning to my mountain eyrie in the evening; it froze sharply every night and a good fire was absolutely necessary soon after sundown. The only way to make a thorough investigation of the mountain ranges is to reside in them for a time, and in Colorado the mining camps afford facilities for this purpose generally, although it is not at every one that a stranger would care to stay long. This camp was indeed a notable exception, everything being clean and orderly, and a regular supply of fresh beef sent by contract from Denver every week made a marked contrast to the menu of salt pork or ham, and canned stuff usually found in such places.

Collecting at 14,000 feet altitude is fatiguing work. "At this far height the cold thin atmosphere" is so rarified that respiration becomes difficult and painful to many people after the slightest exertion. The intense cold every night and occasionally by day, when a piercing wind storm, generally accompanied by blinding hail or snow will come on suddenly after hours of the brightest sunshine, sometimes a dense vapor will come creeping up the mountain sides until everything in enveloped in it. This is a source of real danger, for the chilly white mist is so thick that nothing can be seen a yard away; the sense of utter loneliness that overwhelms a visitor to these desolate regions when so overtaken, if far from camp, is apt to bewilder him entirely, and he is in danger of getting lost. These are considerations that deter many collectors from attempting the higher levels or from being very successful if the summit is reached. I have taken companions at various times to these elevated regions, but could never persuade one to stay a second night there. As to "camping out" in the open air "on the top" I have had varied experiences, some comical and laughable enough, and some nearly tragical, but I long ago made up my mind that the best way to "camp out" is to have a good roof over your head; also that an elevated "bunk," if the boards are ever so hard, is preferable to a "lodging on the cold cold ground."

I have said nothing of the convenience of having your meals prepared for you, yet it is decidedly an advantage, and when the tired collector is pleasantly waited upon, and has his coffee sweetened by such an agreeable housekeeper as was the hostess of our camp in Summit County, I am sure he will not sigh for the lonesome camp kettle, the inevitable frying-pan, and the fire that needs constant replenishing yet never burns, and I may feelingly add, the doubtful fun of camping-out alone.

I give a list of the principal Lepidoptera I captured in seven days, at this place, from the tops of the peaks over 14,000 feet down to timber, the lowest elevation being damp and boggy, partly covered with dwarf willows, the numerous creeks and sloughs being plentifully bordered with flowers.

The following list includes a few species taken on a later visit, August 12th; quite a number of interesting *Pyralids* were also taken.

Euploieta claudia, occasionally at any elevation, very large.
Argynnis cipris, occasionally on flowers at lower levels.
" *eurynome*, everywhere among flowers from highest to lowest places.
" *triclaris*, rather common in boggy valleys below, very partial to flowers of *Polygonum erectum*.
" *helena*, common everywhere above timber.
" *freya*, not rare on grassy slopes everywhere.
Melitæa anicia, very common and in great variety everywhere.
" *palla*, a smoky colored alpine race, very wild and difficult to catch.
Phyciodes camillus, everywhere abundant.
Grapta zephyrus, rather common among willows below.
" *satyrus*, occasionally among willows below.
Vanessa californica, abundant on top of range feeding on flowers of *Saxifraga cespitosa;* also rather common below among willows.
Limenitis weidemeyeri, occasionally among willows below.
Ceonympha ochracea, a few on dry side hills below, very large and bright.
Erebia epipsodea; this with the form *brucei* Elwes, taken in about equal numbers in a rather wet location near the camp, 13,000 feet altitude. This is the highest station I have known for this insect anywhere.
Erebia callias, common on grassy mountain sides in company with *Colias meadii* in August.
Erebia magdalena, seen every day on precipitous and cliffy rocks at highest elevations, very difficult to get at generally, owing to the character of its habitat; caught eleven fine examples one day at one favorite spot, a gravelly tract made very damp by the melting snow just above it.
Chionobas brucei, abundant on elevated grassy slopes.
" *æno*, abundant on highest peaks.
" *chryxus*, occasionally anywhere in barren spots.
Chrysophanus snowii, not abundant, yet found about every elevated point; extremely wary and difficult to take, more so than any other mountain species; found a full-fed larva on *Oxyria digyna* (mountain sorrel).
Lycæna sapiolus; on flowers below.
" *antiacis*, " "
" *podarce*, " "
" *shasta*, on gravelly tracts and bare stony spots at highest altitude.
Pieris calyce, a few on highest peaks, strangely different in behavior to the *Occidentalis* found below. They have the same impetuous spiteful flight after intruders that characterises most of the true alpine species; then circling round and returning to the same rock like *Chionobas æno*. The change of habitat in this insect and *M. palla* is remarkable.
Anthocharis julia, a few on flowers at timber line.

Anthocharis coloradensis, a few on flowers at timber line.
Colias meadii, not many seen on my first visit, but very abundant in August; females generally on flowers.
Colias alexandri, occasionally one would sweep over the top of the range as if lost.
Colias scudderii, common among willows below.
Parnassius smintheus, abundant and in great variety of size and color.
Pamphila colorado and *manitoba*, abundant on flowers everywhere.
" *draco* and *Pyrgus*, plentiful on highest grassy slopes.
Hemaris brucei, rare on flowers of *Mertensia sibirica* below.
Deilephila lineata, at flowers everywhere, even to top of range.
Albuna montana, common on yellow *Compositæ*, and frequently on bare rocks.
Alypia lorquinii, frequent below on *Spilobium* and willows.
Anatolmis grotei, on yellow *Compositæ*.
Gnophæla vermiculata, on yellow *Compositæ*.
Platarctia hyberborea, on example on rock below.
Arctia cervinoides, occasionally on bare ground at top, running about, looking extremely like a *Cicindela* at first sight.
Nemeophila petrosa, flying in sunshine over willows below.
Antarctia brucei, the types taken here one ♂ on rock near camp and one ♀ flying near by; reared a small brood from the eggs laid by this individual.

The following Noctuids and Geometrids were taken mostly on flowers by day; the only thing I could attract by light were two very worn *Glaucopteryx*.

Pachnobia manifesta
Rhizagrotis albicosta
Agrotiphila montana
" *rigida*
" *colorado*
Hadena morna
" *alticola*
" *auranticolor*
" *semilunata*
Pseudanarta singula
Perigea albolabes
Oncocnemis dayi
" *tenuifascia*
Polia theodori
Nephelodes violans
Hydræcia obliqua
Leucania bicolorata
" *adonea*
Xylina carbonaria
Cucullia montana
Plusia snowi
" *angulidens*
" *hochenworthi*
" *divergens*
" *sackeni*
Copablepharon album
Thyreon rosea
Triocnemis saporis
Schinia separata
" *brevis*
Dasyspoudea lucens
" var. *luxuriosa*
" *meadii*
Pseudanthræcia tumida
Melaporphyrea oregona
Heleolonche modicella
Heliaca diminutiva
Anarta cordigera

Anarta melanopa
" *quadrilunata*
" *richardsoni*
" *impingens*
Litocala sexsignata
Lithostege virginata
Philereme meadiata
Rheumaptera hastata
" *lugubrata*
Gnophos haydenata
Caripeta æqualiaria
Acidalia californiata
" *rubrolineata*
Glaucopteryx sabinii
" *polata*
" *caesiata*
" *magnoliata*

and several yet unidentified species.

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MIXED COLONIES OF ANTS.

By Geo. B. King, Lawrence, Mass.

Considerable has been written by naturalists and others about slave-making ants, but nothing of any importance about the mixed colonies we find associated together living in perfect harmony, and not being enslaved, just the same as the human family in this country and many others, mixed races living in one community, and many of them speaking the same language, understanding each other, and where intelligence prevails, laboring and caring for one another; so likewise do some of our species of ants. Each species of ants has a separate and distinct language of its own, and is also capable of teaching it to other species of ants differing from themselves in color, shape and structural characters, and not only are they capable of teaching it to ants of other forms, but can teach it to the hundreds of other Myrmecophilous insects that are found to inhabit their nests, and in many instances can be only found to be associated with ants. I will not discuss at this time how ants communicate with each other, and teach others their peculiar language. This would require more space than would be allowed for this article. I will therefore only mention a few points that may be of some value to any one who may take exceptions as to whether ants can talk and teach others or not.

The first labor that is taught to all young ants is the especial care of its young in all its stages of development. It is quite natural, therefore, when they are out foraging, away from their own colony, they come across other species of ants, and seeing some of their young larva or pupa, they take some of them

home with them to their own colony, where they are cared for as though they were one of their own. In this way many colonies become mixed. In animated nature there is nothing that has so much affection for and takes so much care of, its young, as do the ant family. The young forms of ants that are captured in this way are tenderly cared for, and taught the language of the colony in which it is living, and so lives in peace and happiness; but if we should take any of the adult species from a strange colony and put them with another foreign to their own, they will be immediately attacked, killed, or driven out, in most cases the former. It would make but little difference with which species we may experiment, it will terminate with the like results. On the other hand, we may put strange larvæ and pupæ with other ants, and of an entirely different species; the young forms will be taken in and tenderly cared for as if they were their own, and reared up with that colony, and be able to speak their language and will live perfectly contented with them. We may take again the Aphides, properly called the ant's cows, of which Dr. Bree said that all of the stories told about Aphides being treated as milk cows are myths, by reason of inaccurate observations, "Nature," vol. vi, p. 279, 1872. Aphis is of a different order of insects, widely separated from that of the ants, and most assuredly use a different language from that of the ant tribe. That ants are endowed with the highest degree of intelligence, of all the insect kingdom, is a well proven fact. Collect particular species of Aphides and their eggs, place them in their nests where the Aphides are provided with natural food, and their eggs in a place of safety; this is usually done in the Fall of the year. Some of these eggs will hatch in the ants' nests, and are cared for by the ants, and those that do not hatch are again carried out when the weather permits, in Spring, together with the adult Aphides and placed upon such food-plants as are necessary for them. This they keep on year after year, associated together, understanding each other, the Aphides rendering to the ants their sweet nectar, and the ants in turn providing food and shelter and protection to them. Ants seldom collect adult species of insects for the purpose of domesticating them. They prefer in most instances to obtain the egg, larva or pupa, so that they may be more easily brought up in their way, and more easily taught their language. In some instances they do collect the adult spe-

cies of other insects to propagate from. In such cases they are guarded very closely by the ants. All ants are not endowed with a high degree of intelligence, no more than all of the human family are. Some are degraded, thieves, and lazy, good-for-nothing insects, and one would be surprised at times to see how they can get their living.

A great deal more could be said, but this will have to suffice for the present. The following is a list of ants that I have found to be associated together, but it should be remembered that *Ponera coarctata* Latr. sub. sp. *pennsylvanica* Buckley, *Solenopsis molesta* Say, *Monomorium minutum* Mayr, var. *minimum* Buckley, are Myrmecophilous ants. *Formica sanguinea* Latr. sub. sp. *rubicunda* Em. is a slave-making ant, and may be classed as a Myrmecophilous sp.

Camponotus castaneus Latr. sub sp. *americanus* Mayr, have associated with them *Lasius niger* Linn., *L. niger* var. *americanus* Em.

Ponera coarctata Latr. sub sp. *pennsylvanica* Buckley, *Solenopsis molesta* Say, *Camponotus herculeanus* Linn. sub. sp. and var. *pictus* Forel. Workers of *Tapinoma sessile* Say and *Formica fusca* Linn. var. *subsericea* Say.

Formica pallide-fulva Latr. have associated with them *Lasius niger* Linn., *L. niger* Linn. var. *americanus* Em., *Formica pallide-fulva* sub sp. *nitidiventris* Em., *Prenolepsis parvula* Mayr, *Formica pallide-fulva* sub sp. *fuscata* Em., *Aphænogaster fulva* Rog. and *Solenopsis molesta* Say.

Formica fusca Linn. have associated with them *Ponera coarctata* Latr. var. *pennsylvanica* Buckley and *Solenopsis molesta* Say.

Formica fusca Linn. var. *subsericea* Say have associated with them *Formica pallide-fulva* sub sp. *nitidiventris* Em. and *Solenopsis molesta* Say.

Formica pallide-fulva sub sp. *nitidiventris* Em. have associated with them *Premœtis parvula* Mayr and *Solenopsis molesta* Say.

Formica sanguinea Latr. sub. sp. *rubicunda* Em. have associated with them as slaves *Formica fusca* Linn. var. *subsericea* Say.

Lasius flavus Linn. sub. sp. *myops* Forel, have associated with them *Aphænogaster fulva* Rog., *Lasius niger* Linn., *americanus* Em. and *Tapinoma sessile* Say.

Lasius niger Linn. have associated with them *Tapinoma sessile* Say and *Solenopsis molesta* Say.

Lasius niger Linn. var. *neoninger* Em. have associated with them *Formica pallide-fulva* Latr. sub sp. *nitidiventris* Em., *Lasius claviger* Rog., *L. flavus* Linn. sub sp. *myops* Forel and *L. niger* Linn. var. *americanus* Em.

Lasius claviger Rog. have associated with them *Monomorium minutum* Mayr, var. *minimum* Buckley, *Solenopsis molesta* Say and *Myrmecina latreillei* Curt. var. *brevispinosa* Em.

Lasius niger Linn. var. *americanus* Em. have associated with them *Formica pallide-fulva* Latr. and *Solenopsis molesta* Say.

Prenolepis parvula Mayr have associated with them *Monomorium minutum* Mayr var. *minimum* Buckley and *Solenopsis molesta* Say. *Aphænogaster fulva* Rog. have associated with them *Ponera coarctata* Latr. sub sp. *pennsylvanica* Buckley and *Solenopsis molesta* Say.

Myrmica lobicornis Myl. have associated with them *Lasius niger* var. *americanus* Em. and *Solenopsis molesta* Say.

Cremastogaster lineolata Say have associated with them *Lasius niger* Linn. var. *neoniger* Em. I have also found mixed pupa of *Cremastogaster* and *L. nuniger* in the same nest together.

From the literature that I have read before I commenced to study Formicidæ in their natural formicaries I was led to suppose that all of our ants were deprived of their wings during or shortly after their marriage flight or swarming period. But this seems not to be the case, for I find winged forms, as stated below, to have lived through our cold Winter months, and further observations will, in all probability, add more to this list. In neither case were there to be found any larva or pupa of the ants in the nests at this time.

WINGED FORMS.

Camponotus herculaneus Linn. sub sp. *ligniperdus* Latr. I have found winged forms of males and females April 20th in a rotten hard pine log.

Camponotus castaneus Latr. sub sp. *americanus* Mayr. I have found winged males and females to be quite common April 28th under stones.

Prenolepis imparis Say. I have found winged males and females April 15th under stones.

Prenolepis parvula Mayr. I have found winged males and females May 4th under stones.

OXYBELUS SPARIDEUS Ckll.—A REJOINDER.

By WILLIAM J. FOX.

In recent papers on *Oxybelus* ("Psyche," March; "ENT. NEWS, May) Mr. C. F. Baker criticises several determinations of species of that genus made by me for Prof. Cockerell. Inasmuch as the material I identified as *O. emarginatus* was, I think, returned to Prof. Cockerell, I am unable to discuss that determination, but granting an error on my part, it behooves me to take Mr. Baker to task for asserting that "*O. sparideus* Ckll. (Trans. Amer. Ent. Soc. xxii, 292) as it stands at present, is a synonym of *emarginatus*. In a note below the description, Mr. Fox says it differs in the form of the spine and coarser puncturing. A detailed drawing of the squamæ and spine of *sparideus* received from Prof. Cockerell, shows the form usual in *emarginatus*. The difference in the puncturing as here exhibited would not alone be sufficient to separate them."

Fortunately the type of *O. sparideus* was placed by its author in the American Entomological Society's collection, and after a re-examination and comparison with *O. emarginatus*, I am prepared to re-assert all contained in the foot-note above referred to. Overlooking the coarse punctuation, which Mr. Baker considers of no importance, the spine of *sparideus* is seen to be shorter and broader throughout, and with its lateral margins strongly rounded-out; its emargination is not so deep, and in coloration is reddish testaceous, except at extreme base, whereas in *emarginatus* it is entirely black. In addition, *sparideus* differs from *emarginatus* by the continuous pronotal fascia, the yellow spots on scutellum, and the red tip of abdomen; the latter, while occurring in the female of *emarginatus*, is absent in the male.

Finally, I would suggest the advisability of examining the type or types of a species, if possible, before jumping to conclusions regarding synonymy. If another suggestion be not untimely, and to save Prof. Cockerell's ability as an artist from criticism, let me add the possibility of Prof. Cockerell's specimen or specimens being *O. emarginatus*.

COLLECTORS who are also fond of gunning, fishing, sailing, etc., may have a variety of sport and a good time generally, by patronizing our friend, Dr. O. D. Foulks, at Stockton, Md., who advertises in this number.

On the Occurrence of Chionobas tarpeia in North America.

By H. H. LYMAN.

This species, according to the catalogues of Kirby and Strecker, was described, in 1771, by Peter Simon Pallas, though many authors refer to Esper as the describer in 1777—1783, the dates varying. I do not know whence the types came, but doubtless they were Russian. In Butler's Catalogue of the Satyridæ in the British Museum, published in 1868, the only locality given is, curiously, "Arctic America."

In Edwards' "Synopsis," published in 1872, this species was not given, but it was included in his catalogue of 1877, apparently on Butler's authority, though this is not definitely stated.

Strecker, in his catalogue published in 1878, said, on p. 155, "Chion. tarpeia, an Altaian species, has been by some authors placed with the North American fauna, but without doubt erroneously; I do not believe it ever has been or ever will be found to occur in this country."

In Edwards' Revised Catalogue of 1884 it is given doubtfully, and explicitly on the authority of Butler.

I had long inclined to the belief that a poor specimen of *Chionobas varuna* had probably been mistaken for this species, though I found it difficult to understand how so gross a blunder could have been made by an able Lepidopterist, but in looking over the fine collection of Dr. Henry Skinner in May, 1894, I was much interested at finding an undoubted specimen of *tarpeia* with a label giving the locality as "Hudson's Bay."

The specimen came from the Aaron collection, but Dr. Skinner knew nothing of its history.

Of course the label may be fictitious and unless the history of the specimen can be traced, it would not afford sufficient evidence to settle the question, but the authorities of the British Museum ought to be able to throw some light on it if the specimen or specimens which Mr. Butler had before him when compiling his catalogue are still in existence.

The diagnosis of this species, given by C. J. Maynard in his "Manual of North American Butterflies," is utterly untrustworthy, his statement that the ocelli are white pupiled beneath being especially erroneous.

"A NEW PARASITE," FURTHER REMARKS.

By FREDERICK BLANCHARD.

The interesting article by Mr. Lafler in the NEWS of February recalls an observation of my own made many years ago, which may throw some light on one of the questions raised as to how the Tachinid fly got at the provisions.

While working on the railroad, on a very hot day, a large blue wasp was seen dragging a grasshopper along the ground. The grasshopper was bulkier than itself, but the wasp was vigorous enough to handle it with comparative ease. Soon, in the course of a yard or so, it arrived at a hole it had evidently previously excavated, dropped the hopper and dived into the hole, throwing out some sand; it then backed out quickly, and making two or three rapid turns about the hole it rushed in again; this movement took place two or three times when, at last, it seized the grasshopper which had lain unmolested during the time and dragged it into the hole. Meantime I had noticed two quite small and very active flies hovering about and occasionally alighting in the vicinity of the hole, but paying no attention to the grasshopper. Whenever the wasp appeared they were driven away for the instant, but immediately returned. When the wasp disappeared with the grasshopper there was a sudden and instant copulation of the flies, and in the same second, almost, the ♀ extruded some small masses of eggs, more or less attached together, on the margin of the hole and flew away. The wasp, after an absence limited to a few seconds only, reappeared and at once set to work in the liveliest manner to scratch gravel into the hole, and with the very first grains of sand the eggs were also tumbled in, and no doubt reached their intended destination.

The flies showed no desire to enter the hole themselves, but the wasp evidently suspected that they were in the neighborhood for no good purpose.

While I have used the term eggs, I am strongly of the impression that larvæ were extruded by the female fly, and that they showed some motion.

Mr. ROBERT T. SAUNDERS, of Malden, Mass., intends to spend the Summer at Rainier, Washington, for his health, and will devote considerable time to collecting and studying entomology.

THE IMPRUDENT PHRYGANIDIAN.

By VERNON L. KELLOGG, Stanford University, Cal.

The fittest survive, but not all that are unfit are extinct, else how does that interesting moth, *Phryganidia californica*, continue to exist as a species in very tolerable health and prosperity? For this solitary remnant of what may have been one time a widely-spread and well represented family of moths displays, once each year in its life-history, a reckless disregard of prudence that may sometime cost it dear.

During the Autumn of 1894 and Spring of 1895, this moth was very abundant in the vicinity of the University (Stanford), and did much damage to the liveoak trees, which are the pride and the beauty of the valley. This opportunity to work out the life-history of an insect which, because of its systematic isolation, has always been one of special interest to entomologists was not to be lost. The results of the work have been published elsewhere in detail, I wish to refer here only to a partly successful attempt at self destruction which *Phryganidia* makes annually, and which is the imprudence referred to.

There are two generations of the insects each year, and the Winter is passed in the active larval stage of the second generation. The natural and usual host of the insect is the liveoak, which is green leaved throughout the Winter, and thus furnishes the food necessary for the active, feeding, Winter larvæ. The larvæ are not restricted to the liveoak, however, but those of the Summer generation may be found on the white oak, Douglas' oak, and on two or three other species of deciduous oaks. At the time of the oviposition of the Autumn eggs (the eggs are laid in patches of thirty to fifty on the leaves) the leaves of the deciduous oaks have not yet fallen; but they are certainly going to fall. *Phryganidia*, however,—and this is the imprudence,—lays its eggs on the leaves of deciduous oaks as well as those of liveoaks, and just about the time of the hatching of the Autumn larvæ the leaves of the white oak begin falling. All of the unfortunate *Phryganidia* youngsters hatching from the eggs on these leaves waken into life simply to die of starvation. Thoughtless mother! The continued existence of the species is due to the fact that a part of the eggs are laid on the liveoak leaves.

The new leaves of the deciduous oaks appear about April 1st,

shortly before the time of laying the eggs for the Summer brood of larvæ. The eggs of this brood can be laid, therefore, on both deciduous and liveoaks with the happiest of outcomes. Perhaps it is just this successful outcome of the Spring's essays in maternity that breeds in *Phryganidia* that unwarranted confidence in the white oak that is annually attended with such fatal results to the Autumn young. *Phryganidia* has already one serious obstacle to its increase in the person of one *Pimpla behrensii*, who makes a point of killing a large proportion of the *Phryganidia* youth each year, and it will be well for our interesting moth to refrain from too many imprudences if it wishes to hold its own in the lively struggle for living.

On the genus Meleoma A. Fitch.—The very interesting article by Mr. Banks in the Ent. News for March, 1896 (pp. 95, 96), induced me to re-examine my material for this genus. I find two forms in four examples, all collected by the late H. K. Morrison and received by me from him. One specimen from Mt. Washington was seen by the late Dr. Hagen and bears his label, "*O. signoreti;*" another, from Mt. Washington agrees perfectly therewith, save that the antennæ are paler; both of these agree structurally with *M. signoreti* as defined by Mr. Banks. A third from Colorado, and the fourth, from Mt. Washington, agree structurally and otherwise with the description of *M. slossonæ* Banks, the only discrepancy between them being that in the third the black line on the sides of the face is continuous (as described), whereas in the fourth this line is broken up into two separate spots one on the genæ, the other on the clypeus (such a variation is very frequent in Chrysopidæ). These two forms differ immensely in the structure of the apex of the abdomen, and were unhesitatingly placed in my collection as *the sexes of one species;* such also was Dr. Hagen's opinion according to notes he sent to me. Now, however, Mr. Banks says he has the female of *M. slossonæ*, and that it differs from *Chrysopa* chiefly in the antennæ of that sex being placed more widely apart. Amongst my numerous North American Chrysopidæ I can find nothing that will answer to this description. That the two *M. signoreti* and the two *M. slossonæ* in my collection are respectively of different sexes is, I think, certain. In writing these notes I would by no means imply an error of observation on the part of Mr. Banks, but the facts are sufficiently suggestive to warrant further inquiry.

While on the subject of North American Chrysopidæ it occurs to me that several species have been lately described as pertaining to my genus *Nothochrysa*. I possess only one of these, from California. In *facies* it differs somewhat from the Old World species, and more resembles *Hypochrysa*, and it is probably on the strength of such a suggestion somewhere published by me in years gone by that this latter genus has been considered North American. I think, however, its position is in *Nothochrysa* rather than in *Hypochrysa*. According to the description, *Chrysopa virginica* A. Fitch, probably belongs to *Nothochrysa*.—Robert McLachlan.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., JUNE, 1896.

WE have a great many papers on hand awaiting publication, but the thirty-two pages we issue each month are not sufficient for the increased number of papers received. Now, to meet this demand and not be obliged to refuse important papers, we would like to increase the number of pages of the journal, and we can only do this by an increase in the subscription list. Induce your entomological friends to subscribe and help along a good work. There are entomologists in this country who should subscribe to the NEWS but do not, and there are others who have failed to renew their subscriptions. Some say they can't afford the one dollar a year, but we feel sure the number who really can't afford it must be a very small one. The NEWS is in a sound condition, financially, but it dislikes to be tied down to a fixed number of pages; in fact it is ambitious, and does not desire to stand still but grow, and we think those interested in the study of entomology should see that it does. Those that do not see their papers in this issue will understand why.

THE Fifth Annual Excursion of the Entomological Societies of Brooklyn, Newark, New York and Philadelphia will be held this year on July 4th, near Newark, N. J. All entomologists are invited. Bring your luncheon. Those from Philadelphia and vicinity will take the 6.50 A.M. train from Broad Street Station.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

"Raupenleim" and "Dendrolene."—As a result of the experience gained during the season of 1895 in the use of these materials I spoke rather positively concerning their usefulness on various occasions. I have seen no reason to change my conclusions as to their value for the purposes recommended, but it has been found that it is not desirable in all cases to leave the material on continuously. In the case of the peach orchard upon which experiments were made, the story came after mid-Summer that the "Dendrolene" had killed the borers in the trees. I was scarcely ready to credit that at the time, but I am much more ready to do so now. At the time mentioned there wss no sign of injury to any of the trees from either "Raupenleim" or "Dendrolene," nor was there any in September, at which time the "Raupenleim" was pretty well dried up, ineffective as a covering or for any other purpose, while the "Dendrolene" was in good condition and fully protective for all practical purposes. It seems that this continuous covering is not of advantage to thin-barked, rapidly growing trees, like a young peach. It is found that now, just about the time the trees are starting, that there has been a decided check to growth at the point where the "Dendrolene" has been applied. The outer layer of bark has become lifeless and discolored, while beneath, that upon the trees, is still perfectly healthy. The trees referred to are peach trees, four years old, thrifty and growing rapidly. The treated trees are just as healthy, to all appearances, as those not treated, and, except for the death of the outer layer, no injury has been sustained, but this indicates the necessity of a little care in the use of the material. If it is applied on peach trees in the Spring against the borer, it should be mixed with an equal proportion of dry earth, which will leave it just as effectual as a covering to keep out the borer, and will deprive it of some of its penetrating qualities. The crust thus formed can be easily scraped off after mid-Summer, when danger from borers is over, and this will avoid the danger of injury to the bark. The "Raupenleim" had a similar, though much less marked effect, due to the fact, probably, that it is much more viscid, and dries up in a comparatively short time instead of simply getting thin under the influence of heat, as does the "Dendrolene." On apple trees, where this same material was applied liberally to keep out the borers, it was perfectly effective, and not the least trace of injury of any kind was found upon the tree or bark. Experiments will be continued with the material in the direction of mixing it with land plaster or other substances, to reduce its action upon the trees. I am just as much convinced of its usefulness as ever, but wish to suggest to those who intend experimenting with it the desirability of caution in certain cases.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

Mrs. A. T. SLOSSON will soon go to Gale Cottage, Franconia, N. H.

TRANSACTIONS of American Entomological Society, volume 23, number 2, will contain papers by Leng and Hamilton, on the Lamiinæ of North America; and Ashmead, on Parasitic Hymenoptera.

Prof. T. D. A. Cockerell proposes to found a health resort for scientific persons, teachers and kindred spirits, at Las Cruces, New Mex. Loafers, politicians, or other self-interested or ignorant persons need not apply. The scheme is a good one, and should prove successful.

THE collection of the American Entomological Society has recently been enriched by the presentation, by Mr. Cockerell, of the types of nearly all of his species of *Perdita*, described in the current number of the "Proceedings" of the Academy of Natural Sciences of Philadelphia.

IT is well known that a full-grown larva of *Thyreus abbotti* is a formidable appearing creature to the uninitiated, which is in no wise lessened by its habit of turning its body quickly from side to side and uttering a squeaky noise when alarmed. A lady of my acquaintance whose porch is overhung with an *Ampelopsis quinquefolia* or woodbine, came to me one day and said "that there were the horridest great worms on her woodbine; they were as long as that"—measuring off a good eight inches on her forefinger and hand—"and as big round as any thumb with one big eye in the middle of their head. There was one got into the sitting-room this morning and I had to get Charles to come with the tongs and carry it out. Whenever I went near it it would thrust its head round and run out its tongue and hiss." Here I exploded. "Oh, you can laugh if you want to, but you wouldn't have laughed if you had been there. I aint so afraid of them as my sister is though. There was one got into her parlor one day when she was alone; she is an old maid, and she had to wait until the neighbors got home before she could get it out."

The occasion of her visit to me was to find out what was eating up her peas. On examination I found great numbers of half-grown larva of

H. io, and explained also another mystery, where the nettles were that stung them while they were picking peas. They were quite ready to believe that the innocent *abbotti* was capable of spitting poison, but never thought of receiving injury from the fuzzy little *io*, which is quite common here and frequently troublesome to our harvesters, but this is the only case I know of where it was the cause of real injury.—W. F. FISKE.

A CONSERVATIVE.

The garden beds I wandered by
  One bright and cheerful morn,
When I found a new-fledged butterfly
  A-sitting on a thorn,
A black and crimson butterfly,
  All doleful and forlorn.

I thought that life could have no sting
  To infant butterflies,
So I gazed on this unhappy thing
  With wonder and surprise,
While sadly with his waving wing
  He wiped his weeping eyes.

Said I, "What can the matter be?
  Why weepest thou so sore?
With garden fair and sunlight free
  And flowers in goodly store,"
But he only turned away from me
  And burst into a roar.

Cried he, "My legs are thin and few
  Where once I had a swarm!
Soft fuzzy fur—a joy to view—
  Once kept my body warm,
Before these flapping wing-things grew
  To hamper and deform."

At that outrageous bug I shot
  The fury of my eye;
Said I, in scorn all burning hot,
  In rage and anger high,
"You ignominious idiot!
  Those wings were made to fly!"

"I do not want to fly," said he;
  "I only want to squirm!"
And he drooped his wings dejectedly,
  But still his voice was firm;
"I do not want to be a fly!
  I want to be a worm."

O yesterday of unknown lack!
  To-day of unknown bliss!
I left my fool in red and black;
  The last I saw was this:
The creature madly climbing back
  Into his chrysalis.

CHARLOTTE PERKINS STETSON.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the anatomy of insects, however, whether relating to American or exotic species will be recorded.

1. ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, T. xl, 2.—New species of Thysanoptera, E. Bergroth. New Curculionidæ from British East Africa, J. Faust.

2. JOURNAL OF THE CINCINNATI SOCIETY OF NATURAL HISTORY, xviii—The probable origin and diffusion of *Blissus leucopterus* and *Murgantia histrionica*, F. M. Webster.

3. ENTOMOLOGISCHE NACHRICHTEN, xxii, H. 6.—Some new Cetonidæ, G. Schoch.

4. THE ENTOMOLOGIST'S MONTHLY MAGAZINE, April, 1896.—On an intermediate "Aonidiform" stage in *Aspidiotus*, E. E. Green. On the grouped abdominal glands of the Diaspinæ, ibid.

5. THE ENTOMOLOGIST'S RECORD AND JOURNAL OF VARIATION, April, 1896.—Tabulation of the subgenera included in *Apatela*, Hb., with their respective types, A. R. Grote. Larval genera and subgenera in *Apatela*, ibid. On the genera in the Apatelidæ (= Acronyctidæ).

6. TRANSACTIONS OF THE HORTICULTURAL SOCIETY OF CENTRAL ILLINOIS, vol. xxix (new series) [Extract].—Insects beneficial to horticulture, W. G. Johnson.

7. Nineteenth Report of the State Entomologist of Illinois, Appendix [Extract].—The Mediterranean flour moth (*Ephestia kuehniella* Zell.), W. G. Johnson.

8. ANNALS AND MAGAZINE OF NATURAL HISTORY, April, 1896.—Notes on some Ethiopian species of Ischnurinæ . . . , R. I. Pocock. On the genus *Dactylipalpus* Chapuis, and two new genera of Scolytidæ from Africa, W. F. H. Blandford.

9. PROCEEDINGS OF THE CALIFORNIA ACADEMY OF SCIENCES (2), vi, [Extract].—New Mallophaga, I . . . , V. L. Kellogg.

10. TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xxiii, 1.—The taxonomic value of the antennæ of the Lepidoptera, D. Bodine. New North American spiders and mites, N. Banks. Supplement to "The Crabroninæ of Boreal America," W. J. Fox. The Dipterous genus *Tachytrechus* and *Macellocerus*, J. M. Aldrich. A monograph of the genus *Synergus*, C. P. Gillette.

11. JOURNAL OF THE NEW YORK MICROSCOPICAL SOCIETY, xii, 2.—The pygidium of the common flea, A. C. Stokes.

12. OVERSIGT OVER DET K. D. VIDENSKABERNES SELSKABS FORHANDLINGER, 1896, No. 1.—Contribution to the natural history of the Strepsiptera, F. Meinert.

13. ACTA SOCIETATIS PRO FAUNA ET FLORA FENNICA, vol. ix.—Corrodentia Fennica, I, Psocidæ: Catalogue and descriptions of the Psocidæ of Finland, O. M. Reuter. Neuroptera Fennica: Catalogue and descriptions of the Neuroptera of Finland, ibid.

14. PROCEEDINGS OF THE UNITED STATES NATIONAL MUSEUM, vol. xviii [Extracts].—*Priodesmus*, a new genus of Diplopoda from Surinam, O. F. Cook. On *Geophilus attenuatus* Say of the Class Chilopoda, ibid. On the arrangement of the Geophilidæ, of family of Chilopoda, ibid. East African Diploploda of the Suborder Polydesmoidea, collected by Mr. William Astor Chanler, ibid.

15. THE CANADIAN ENTOMOLOGIST, May, 1896.—John M. Denton, anonymous. Captain J. Gamble Geddes, anonymous. Two new species of *Papirius*, J. W. Folsom. *Lepyrus*, J. Hamilton. The male of *Monodontomerus montivagus* Ashm., T. D. A. Cockerell. The cigar-case-bearer of the apple (*Coleophora fletcherella*), J. Fletcher. New American parasitic Cynipidæ (Allotriinæ), C. F. Baker. Notes on bees of the genus *Prosopis* . . . , C. Robertson. Notes on New Mexico and Arizona Hymenoptera (cont.), C. H. T. Townsend.

16. SITZUNGS-BERICHT DER GESELLSCHAFT NATURFORSCHENDER FREUNDE, 1896, No. 3.—Herr Wandolleck communicates on the antennæ of *Onychocerus albitarsis* (no title).

17. Die Bienen Europas, Theil II, H. Friese.

18. UNITED STATES DEPARTMENT OF AGRICULTURE (Division of Entomology), Bulletin No. 1, New Series.—The honey bee: a manual of instruction in Apiculture, F. Benton.

19. HORÆ SOCIETATIS ENTOMOLOGICÆ ROSSICÆ, xxix.—Contribution to the bee fauna of Turkomania, F. Morawitz. Entomological miscellany: On the spinning-glands of tenthredinid larvæ; On the œsophigal sacks (Schlundsäcke) of the saw-flies and other insects, N. Cholodkovsky. New Asiatic Coleoptera, A. Semenow. Revision of the subgenus *Compsodocadion* Ganglb., B. E. Jakowleff.

20. BIOLOGIA CENTRALI-AMERICANA, Zoology, pt. 128.—Arachnida Araneidea, pp. 161–168, pl. 19 (*Epeirotypus* to *Clubionia*), O. P. Cam-

bridge. Coleoptera, vol. iii, pt. 1, pp. 473-496 (*Pyrophorus* to *Tomocephalus*), G. C. Champion. Coleoptera, vol. iv, pt. 1, pp. 113-120 (*Platypus* to *Scolytus*), W. F. H. Blandford. Lepidoptera Rhopalocera, vol. ii, pp. 417-424, pl. 88 (*Camptopleura* to *Gorgythion* nov.), F. D. Godman and O. Salvin. Lepidoptera Heterocera, vol. ii, pp. 273-298, pl. 64 (*Cataclysta* to *Prionapteryx*), H. Druce. Rhynchota Homoptera, vol. ii, pp. 137-144 (*Antianthe* nov. to *Telamona*), W. W. Fowler. Diptera, vol. ii, pp. 281-288 (*Sarcophaga* to *Onesia*), F. M. v. d. Wulp.

21. JOURNAL OF THE ASIATIC SOCIETY OF BENGAL, lxiv, pt. 2, No. 3.—A list of the butterflies of Sumatra . . . , L. de Niceville and L. Martin.

22. ANNALES AND MAGAZINE OF NATURAL HISTORY, May, 1896.—Notes on the Pierine butterflies of the genus *Daptonura*, with descriptions of new species, A. G. Butler. On Odonata from the Province of Szechuen in Western China, and from Mauphin in Eastern Thibet, R. McLachlan. A further revision of the species of scorpions belonging to the South African genera *Uroplectes*, *Lepreus* and *Tityolepreus*, R. I. Pocock.

23. THE KANSAS UNIVERSITY QUARTERLY, April, 1896.—Bibliography of North American Diptera, S. W. Williston.

24. BULLETIN OF THE OHIO AGRICULTURAL EXPERIMENT STATION, No. 68.—Some destructive insects, F. M. Webster. Ibid. No. 69.—The chinch bug, F. M. Webster.

25. NINETEENTH ANNUAL REPORT OF THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION, pt. ii.—Injurious insects, W. C. Sturgis.

26. ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xl, No. 3.—Odonatological comments, E. de Selys-Longchamps.

27. PSYCHE, a journal of entomology, May, 1896.—The Mallophaga, V. L. Kellogg. Notes on the Winter insect fauna of Vigo County, Indiana, v, W. S. Blatchley. Notes on the types of *Papirius texensis* Pack. and description of a new *Smynthurus*, J. W. Folsom. The larva of *Cautethia grotei* Hy. Edw., H. G. Dyar. New catalogue of bees, T. D. A. Cockerell. *Chrysobothris femorata* and *Clerus 4-guttatus*, F. C. Bowditch.

28. Species des Hymenopteres d'Europe and d'Algerie, E. Andre.—Chrysidæ (cont.), R. du Buysson.

29. THE ENTMOLOGIST'S MONTHLY MAGAZINE, May, 1896.—Notes on some Hemiptera-Homoptera, with descriptions of four new species from the Vienna Museum, W. W. Fowler.

30. The Crambidæ of North America, C. H. Fernald, 8vo. T. Massachusetts Agricultural College, January, 1896.

31. MEMOIRS OF THE NATIONAL ACADEMY OF SCIENCES, vii.—Monograph of the Bombycine moths of America, North of Mexico, including their transformations and origin of the larval markings and armature, pt. 1 (Notodontidæ), A. S. Packard.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding literature, in which that author's paper is published; * denotes that the paper in question contains descriptions of new North American forms.

MYRIAPODA.

Cook 14 (four).

ARACHNIDA.

Pocock 8, 22, Banks 10*, Cambridge 20*.

NEUROPTERA.

Reuter 13 (two), Folsom 15*, 27*, McLachlan 22, de Selys-Longchamps 26.

HEMIPTERA.

Bergroth 1, Webster 2, Green 4 (two), Kellogg 9*, 27, Fowler 20*, 29*.

COLEOPTERA.

Faust 1, Schoch 3, Blandford 8, 20*, Meinert 12, Hamilton 15, Wandolleck 16, Semenow 19, Champion 20*, Blatchley 27, Bowditch 27.

DIPTERA.

Aldrich 10*, Stokes 11, v. d. Wulp 20*, Williston 23.

LEPIDOPTERA.

Grote 5 (two), Chapman 5, Johnson 7, Bodine 10, Fletcher 15, Godman and Salvin 20*, Druce 20*, Nicevillé and Martin 21, Butler 22, Dyar 27, Fernald 30*, Packard 31.

HYMENOPTERA.

Fox 10*, Gillette 10*, Cockerell 15, 27, Baker 15*, Robertson 15*, Townsend 15, Friese 17, Benton 18, Morawitz 19, Cholodkovskoy 19, Jakowleff 19, Buysson 28.

ECONOMIC ENTOMOLOGY.

Johnson 6, 7, Webster 24 (two), Sturgis 25.

Doings of Societies.

PHILADELPHIA, May 12, 1896.

A stated meeting of the Feldman Collecting Social was held at the residence of Dr. D. M. Castle, 2007 Arch Street. Members present: Messrs. Bland, Hoyer, E. Wenzel, Laurent, Fox, Trescher, Griffith, Johnson, H. W. Wenzel, Haimbach, Seiss, Castle, Boerner and Schmitz. Honorary members: Drs. Geo. H. Horn and Henry Skinner. Visitor, Mr. Frank Hoyer. Meeting called to order at 9.05 P.M., President Bland presiding. Dr. Castle gave a detailed account of the southern collecting

trip from which Mr. Laurent and he had just returned, it embraced their experience up to their arrival at Enterprise, Fla., from which place they returned to Jacksonville; the doctor returning home and Mr. Laurent continuing on to Gulf Hammock, Fla. The doctor exhibited, by request, some of the Coleoptera captured, he having otherwise intended deferring the exhibition of the same until he had completed mounting the entire collection. Mr. Laurent also exhibited the dragon flies taken, and a number of interesting photographs of incidents and localities visited. The success of the trip can only be ascertained when the whole of the collection is carefully gone over and mounted, as they have gathered quite a variety and quantity of material.

The next meeting will be postponed until the return of Mr. Wenzel from the South.

No further business being presented the meeting adjourned at 10.30 P.M. to partake of a sumptuous banquet provided by Mrs. Castle, at whose request the meeting was held at the doctor's residence in welcome of the return of the collectors from Florida.

THEO. H. SCHMITZ, *Secretary.*

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

A NEW GENUS OF HIPPOBOSCIDÆ.

By S. W. WILLISTON.

BRACHYPTEROMYIA gen. nov.

Allied to *Oxypterum* Leach (*Anapera* Meigen, *Chelidomyia* pt. Rond.), but the wings rudimentary and functionless. Antennæ inserted laterally, porrect, projecting nearly as far forward as the proboscis, subcylindrical, the distal portion clothed with long black hair. Eyes very small, oval, situated on the sides of the head; ocelli wholly wanting. Legs stout; claws tridentate; pulvilli elongate; empodium slender. Abdomen narrow (♂); hypopygium protruding, subcylindrical, and moderately dilated distally. Wings rudimentary, scale-like, subtriangular in shape,

about as broad as long and protruding but a short distance beyond the margin of the scutellum, with indistinct indications of veins, the costal portion provided with black hair; the distal portion convex in outline; femora stout.

Brachypteromyia femorata n. sp. ♂.—Brownish yellow in color, the abdomen, save the basal portion, appearing black beneath the dense black hair. Hair everywhere black and usually long; on the top of the head it forms two long rows, beginning on either side of the base of the antennæ and convergent posteriorly. On the sides of the mesonotum it is somewhat tuft-like in front and behind, and forms a long, dense row on the scutellum; the hair of the narrow portion of the abdomen very abundant and shorter; that of the femora rather sparse. The color of the claws, save the basal tooth, is black. Length 6 mm.

One specimen, Wyoming, on *Macropis melanoleucus*. Collected by Mr. R. C. Gowell, of the University of Kansas.

The genus is, as already stated, closely allied to *Oxypterum*, and it is possible that the difference between the elongated and pointed wings of that genus and the short, functionless, rounded ones of this may not be considered generic. From *Lipoptena*, the presence of three teeth on each of the claws and the structure of the antennæ will at once distinguish the genus.

I wish to record here the following genera of Diptera which I have recognized from North and Central America, known hitherto only from South America, Europe, India, Africa and the Radak Islands: *Miastor* Meinert, *Camptocladius* Wulp, *Orthocladius* Wulp, *Polymera* Wiedemann, *Mongoma* Westwood, *Lolphoteles* Loew, *Analcocerus* Loew, *Campeprosopa* Macquart, *Damalis* Fabricius, *Dicranus* Loew, *Leiomyza* Meigen, *Willistoniella* Mik. The greater part of them are represented by species yet undescribed.

———o———

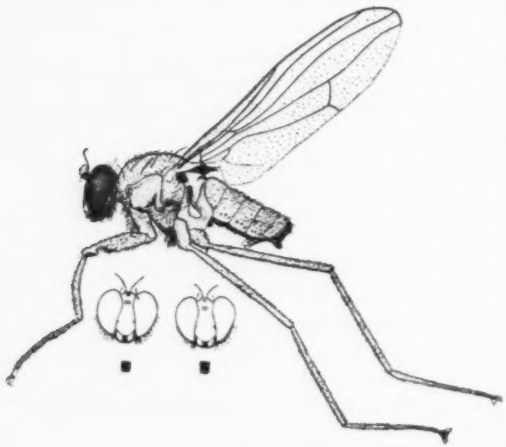
A NEW GENUS AND SPECIES OF DOLICHOPODIDÆ.

By William Morton Wheeler, Ph.D.

PARHYDROPHORUS nov. gen.

Face broad in both sexes, but little narrower in the male than in the female, reaching to the lower corner of the eyes, with a small swelling on either side of its lower third near the orbit. Eyes distinctly pubescent; cheeks narrow. Antennæ like those of *Hydrophorus:* first joint without hairs its dorsal surface, second joint short and transverse, third joint rounded, with a dis-

tinct ventral notch and a dorsally inserted, two-jointed, bare arista. Front excavated behind the antennæ, with the usual bristles; palpi of moderate size, incumbent; proboscis not very prominent; inferior orbit conspicuously bearded. Thorax rather deep and long, convex above, with a slight but distinct depression in front of the scutellum. On either side of the dorsum there is a row of long bristles, and between these rows there are several series of small weak bristles. Posteriorly there is a large and conspicuous bristle on either side of the prescutellar depression; scutellum bare, with the usual four bristles. Abdomen with five visible segments in both sexes, short, somewhat flattened dorsoventrally, especially in the female; hypopygium embedded,



Parhydrophorus canescens ♂; *a*, face of ♂; *b*, face of ♀.

but with its appendages frequently exserted and visible. The most prominent of these consist anteriorly of two pairs of slender hook-like processes directed downwards and forwards, and posteriorly of a median spoon-shaped structure which is directed downwards and backwards; middle and hind legs slender, much longer than the fore legs; fore femur enlarged throughout its length in the male, with a broad deep notch near the apical end, and a series of spine-like bristles along the under surface near

its base; fore femur of the female thickened at the base, but tapering to the apex, without the deep notch, and with several stout bristles along its under surface; inner side of hind trochanter of male armed with a thick and pointed spur; first joint of hind tarsi without bristles, twice the length of the second joint; pulvilli of all the tarsi dilated. Wings long and of rather uniform width, with prominent anal angle; cross-vein oblique, only half its length from the posterior margin; third and fourth veins lyrate, more parallel at their terminations; sixth vein small and indistinct.

The genus *Parhydrophorus* is closely allied to the genera *Scellus* and *Hydrophorus*, especially to the latter. The male may be readily distinguished from the male *Hydrophorus* by the deep notch in the fore femur, the prominent spur on the hind trochanter, and the structure of the hypopygium. The unpaired spoon-shaped appendage of the latter organ is represented in *Hydrophorus* by a pair of small appendages. The whole hypopygium, too, in the latter genus is smaller and much more concealed. Both the male and female of *Parhydrophorus* lack the spur-like projection at the tip of the fore tibia, a character which is strikingly developed in *Scellus*, and also faintly developed in many species of *Hydrophorus*. In general appearance the flies of the new genus differ from the species of *Hydrophorus* in the longer and whiter hairs covering the legs and the greater portion of the body.

Parhydrophorus canescens nov. sp.

Male.—Antennæ black, basal joint more brownish in a certain light; arista thick, black, with a white tip. Face so thickly covered with white dust that the ground color is invisible. Palpi grayish, with rather long white hairs; front covered with an extension of the white dust of the face, but less thickly, so that the coppery green ground color may be seen; frontal bristles and the stout hairs of the superior orbit black, the rather dense beard on the inferior orbit glistening white, or in some specimens more yellowish; occasionally also with an admixture of black hairs above. Thoracic dorsum metallic-green, with four narrow cupreous vittæ; in many specimens these are indistinct and seem to have fused to form a large cupreous patch posteriorly. The small hairs arranged in rows down the middle of the thoracic dorsum are white, the bristles in the lateral rows black. Pleuræ dull metallic-green anteriorly, blackish posteriorly, covered with a rather thick layer of gray dust. There is a conspicuous tuft of delicate white hairs just above the insertion of the fore coxa and another tuft of longer and sparser white hairs above the insertion of the middle coxa; scutellum metallic-green or coppery, with black bristles.

Abdomen metallic-green, with a more or less pronounced coppery reflection on the dorsal surface; laterally it is thickly dusted with white. The black depressions forming a series along either side are small and circular. The whole surface of the abdomen is clothed with silky white hairs, which are conspicuously long on the sides of the segments. Anterior, or inner appendages of the hypopygium yellow; spoon-shaped posterior appendage with a faint ridge along its convex dorsal surface black, with white hairs and dust. Legs dull metallic-green, rather thickly clothed with white hairs; coxæ with white hairs, longest and most conspicuous on the anterior faces of the fore pair; fore femur with from four to six equidistant truncated black spines like bristles on its under surface. The proximal edge of the broad and deep notch is furnished with a dense row of minute black spines; the distal edge is smooth and black on its inner surface. The tip of the fore femur on its inner side bears a small tuft of yellow hairs, on its outer side a series of graduated black bristles. The fore tibia is bent near its middle and armed with three small black bristles on its outer surface; its inner surface bears a short series of minute spines near the proximal end; towards the tip of the fore tibia the white hairs are longer, and on the inner side at the extreme tip form a short dense fringe; fore tarsi plain, first joint about twice the length of the second; middle and hind legs slender and beset with short black bristles at intervals. First joint of middle tarsi about twice as long as the second, last joint distinctly enlarged, subtriangular, black; hind trochanter armed with a sharp spur, which projects downwards at right angles to the hind femur. This spur is striated, and seems to consist of several agglutinated black bristles. The first tarsal joint is distinctly thicker than the corresponding joint of the middle leg; pulvilli of all the legs white. Wings grayish hyaline, yellow at the base, and for some distance along the costal border; veins yellow basally, brownish distally, the costa often yellow for fully two-thirds of its length. The third and fourth veins diverge with a gentle but distinct curvature and then converge to pursue a more parallel course towards the tip of the wing, at which they again diverge very slightly; halteres clear light yellow; tegulæ knob shaped, light yellow, with a dense tuft of silvery white cilia. Length of body 4–4.5 mm.; length of wings 4.5–5 mm.

Female.—Face with a thick layer of golden-yellow dust, which extends up over the metallic-green front; dust on the thorax thicker than in the male and more yellowish. Abdomen broader and flatter. Legs plain, hairs on the fore coxæ shorter, fore femur with only the faintest indication of a notch, the under surface armed with several pointed and irregularly arranged bristles. The three black bristles on the outer surfaces of the fore tibia weaker than in the male; middle and hind legs quite plain, the former without the dilatation of the fifth joint and the latter without the spur on the trochanter; pulvilli of all the tarsi somewhat smaller than in the male. Length of the body 4–5.5 mm.; length of wings 4.5–6 mm.

Described from twelve male and twelve female specimens. These were collected in part by Mr. A. W. Snow about forty

miles north of Lusk, Wyoming, during July, 1895, and in part by myself, in the same locality, during August of the same year. The flies were found running about in swarms on the sunny surface of small pools which were rapidly drying up in the bed of Little Lightning Creek. Their habits resemble those of *Hydrophorus*, with species of which they were found associated. They were very agile and not easily captured.

A NEW EMPID WITH REMARKABLE MIDDLE TARSI.

By WILLIAM MORTON WHEELER, Ph.D.

Rhamphomyia scaurissima nov. sp.

Male (Fig. 1).—Black. Face very broad for a male, with a few bristles along either orbit. Antennæ velvety black; first and second joints with rather stout hairs; first joint short and cylindrical; second joint spherical; third joint cylindrical, gradually tapering to a bluntly rounded tip, on which the short style is inserted. Palpi slender, black, with prominent black hairs. Proboscis as long as the head, yellowish at the tip, labella fuscous, hairy; bristles of the front and hairs of the posterior and inferior orbits prominent, black. Thorax opaque, dusted with gray, especially on the pleuræ and just in front of the scutellum; bristles prominent, confined almost exclusively to the dorsal and humeral regions; scutellum dusted with gray and beset with several black hairs. Abdomen usually more shining than the thorax, and covered with shorter black hairs; hypopygium large, porrect and gaping, fringed with long black or brownish hairs, which are usually directed backwards; central filament long and whip-like, almost completely disengaged. Legs black, in some specimens more piceous, hairy; tips of coxæ frequently yellowish; first joint of fore tarsi perceptibly incrassated; middle tibia shortened and thickened, with very long and conspicuous hairs; joints of the middle tarsi (Fig. 3) curiously modified as follows: First joint consisting of two parts, a globular base articulating

Fig. 1.—*Rhamphomyia scaurissima* ♂.

with the tibia, and a large scale-like appendage attached to the outer surface of the globular base. This scale-like appendage is concave on its inner and convex on its outer surface and overlaps the second joint. The globular base is beset with prominent hairs radiating out in all directions; the hairs on the scale-like appendage are shorter and stouter. The second joint, which articulates with the globular base of the first joint, is large and cylindrical and sends out from its proximal end a long posteriorly directed club-shaped appendage, clothed with a pencil of long hairs. The hairs on the shorter limb of the joint are smaller and more or less recurved on the anterior face. The third joint is enormously enlarged transversely to form a boat-shaped structure. Its hairs are limited to certain portions of its surface. The fourth and fifth joints are comparatively small, the former being perceptibly swollen, the latter resembling the corresponding joint of the fore and hind tarsi. Hind legs plain, except for the fringe of long hairs on the tibiæ, especially on their posterior surfaces. Wings rather long and narrow, grayish hyaline, with brown veins; costa near its middle with a prominent black thickening, just beneath which is a long and narrow brown stigma; second vein with a small thickening just before its junction with the third vein; discal cell of medium size; halteres fuscous, capitulum somewhat darker. Length of body 3.5 mm.; length of wings 4 mm.

Fig. 2.—*Rhamphomyia scaurissima* ♀.

Female (Fig. 2).—Face somewhat broader than that of the male. Thorax with a thicker layer of gray dust and shorter bristles. Legs plain, with much shorter hairs. Wings with somewhat paler veins and with the discal cell greatly enlarged, so that the gently sinuous cross-vein which forms its outer boundary lies near the posterior margin. This cross-vein does not send out a vein to the margin as in the male. Length of body 3.5 mm.; length of wings 3.75 mm.

This species was described from ten male and six female specimens kindly loaned me by Mr. A. W. Snow. They were collected at Palo Alto, Cal., March 30, 1895.

The species is an unusually striking one on account of the re-

markable development of the secondary sexual characters, especially in the male. The peculiar modifications of the *fore* tarsi in the males of many Dolichopodidæ are well known, and Mr. Snow has given a good account of the singular *hind* tarsi of *Platipeza calceata* Snow and *P. ornatipes* Towns.,* but no Dipteron known to me has such peculiar *middle* tarsi as the *Rhamphomyia* just described. In the case of the Dolichopodidæ it is certain from the observations of Dahl† and Aldrich‡ that the ornamental tarsi are vibrated before the females during a kind of courtship. It has been inferred that these ornaments very probably answer the same purpose as the remarkable plumes of many male birds, *e. g.* the ocellate feathers of the peacock, Argus pheasant, etc. As *Rhamphomyia scaurissima* probably flies in swarms with a peculiar dancing movement like other species of the genus, we may suppose that at such times the unusual tarsi of the males would be dangled conspicuously and thus attract the attention and stimulate the appetency of the inornate females.

In the female of *Rh. scaurissima* the great enlargement of the discal cell must be regarded as a secondary sexual character, since the moderate discal cell of the male is almost certainly of a more generalized and conservative nature. Most species of *Rhamphomyia* retain this conservative type of discal cell in both sexes, but a certain number of species present the peculiar enlargement in the female. It occurs in the European *Rh. spissirostris* Fall., *Rh. nigripes* Fab. and *Rh. serpentata* Loew, and among the North American species in Loew's *Rh. limbata*, *litu-*

Fig. 3.—Right middle foot of *Rh. scaurissima* ♂ seen from the inside.

* American Platipezidæ, Kans. Univ. Quart. vol. iii, No. 2, 1894, pp. 143–152.
† Die Insekten koennen Formen unterscheiden. Zool. Anzeiger 12 Jahrg. 1889, pp. 243–247.
‡ Courtship among the Flies, Am. Naturalist, vol. xxviii, 1894, pp. 35–37.

rata and *irregularis*. I have also observed it in three undescribed species from Wisconsin, Kansas and Colorado respectively. *Rh. scaurissima*, however, differs from all of these excepting some specimens of the Colorado species in lacking the vein which runs from the posterior cross-vein to the margin. This is all the more remarkable because the male has this vein well developed.

OBITUARY.

JULIUS FLOHR, Coleopterist, died on February 8th, last, at Vera Cruz, Mexico. He was born in Hamburg, Germany, on Feb. 11, 1837, and went to Mexico in 1859.

AUGUSTE SALLE.—On the fifth of May, in Paris, there died a man whose loss will be sincerely regretted by every American entomologist who had visited that city. Speaking our language fairly well, he was always ready to devote his time in assisting those in need of an interpreter. As an entomologist of no small capacity, and with a large personal acquaintance among entomologists, he has proven of immense assistance to all who had the pleasure of his acquaintance. It is to be regretted that lack of time, owing to the demands of the press, prevent me in giving an extended notice of his services.—G. H. HORN.

ANDREW S. FULLER, widely known as a writer on subjects related to agriculture and horticulture, died suddenly of heart failure on Monday, May 4th, at his home in Ridgewood, N. J., in the sixty-eighth year of his age. Mr. Fuller was agricultural editor of the New York *Weekly Sun* for more than a quarter of a century, and at different times he had been connected with *The Rural New Yorker*, *The Tribune*, *The Agriculturist* and *American Gardening*. He was the author of several popular books on arboriculture, small fruit culture and the propagation of plants, and he had recently completed a treatise on nut-culture, which he considered his most important work. He was an authority in some branches of entomology, an enthusiastic student and experimenter in his chosen field, and was absorbed in his favorite occupations until the very hour of his death.

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